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(54) INFORMATION RECORDER AND METHOD FOR SETTING ITS RECORDING MODE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an information recorder that enables a user to set a recording mode in the case of recording a video program with easy operations and to provide a method for setting its recording mode.

SOLUTION: In response to selection of an optional video program among video programs recorded on a recording diskthe recording mode according to the attribute of the video program is set.

CLAIMS

[Claim(s)]

[Claim 1]An information storage device which carries out postscript record of the video program new to a recording medium with which attribution information which shows the attribute of said video program with a video program of at least 1 is recordedcomprising:

An attribution information reproduction means which reproduces said attribution information from said recording mediumand acquires reproduction attribute information.

A recording device which records a signal acquired by carrying out code translation processing by encoder which performs code translation processing according to said reproduction attribute information to a video signal and an audio signal which bear said new video programand said encoder on said recording medium.

[Claim 2]The information storage device according to claim 1wherein said attribution information is in image compression mode which shows MPEG(Moving Picture Experts Group) 1 or MPEG 2.

[Claim 3]A setting method of a recording mode in an information storage device which carries out postscript record of the video program new to a recording medium with which attribution information which shows the attribute of said video program with a video program of at least 1 is recorded characterized by comprising the following.

Distance which reproduces said attribution information from said recording mediumand acquires reproduction attribute information.

Distance which performs recording-mode setting out which should perform code translation processing according to said reproduction attribute information to an encoder which performs code translation processing to a video signal and an audio signal which bear said new video program.

[Claim 4]A setting method of a recording mode in the information storage device

according to claim 3wherein said attribution information is in image compression mode which shows MPEG(Moving Picture Experts Group) 1 or MPEG 2.
[Claim 5]It is the recording medium with which software for carrying out postscript record of the new video program is recorded on a recording medium with which attribution information which shows the attribute of said video program with a video program of at least 1 is recordedDistance which said software is made to reproduce said attribution information from said recording mediumand acquires reproduction attribute informationA recording mediumwherein a command which performs distance which performs recording-mode setting out which should perform code translation processing according to said reproduction attribute information to an encoder which performs code translation processing to a video signal and an audio signal which bear said new video program is described.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the information storage device which records the video program which consists of a video signal and an audio signal on a recording medium.
[0002]
[Description of the Prior Art]Nowthe product of added-a postscript type DVD(Digital VersatileDisc)-R and rewritable DVD-RW is planned as a recordable optical recording medium. In these DVD-Rs and DVD-RW (DVD is only called hereafter)it hits carrying out compression encoding of the video signal and audio signal which bear a video programand recording themand the recording mode can be arbitrarily set now to the user side. As an attribute which determines a recording modethere are a compression methodresolution of an imagean aspect ratioetc. For exampleas a compression methodeither one of MPEG(Moving

Picture Experts Group) 1 or MPEG 2 can be specified. As an aspect ratioeither one of 4:3 or 16:9 can be specified. Before a user records a desired video program on DVDhe sets up the recording mode of a DVD recorderand makes recording operation start by specifying each of these attributes.

[0003]The DVD player which reproduces recorded information from DVD is equipped with the function called the play list reproduction to which continuous reproduction of two or more video programs currently recorded is carried out in the arbitrary turn set up by the user side. in using this play list regenerative functiona user creates the play list data which arranged two or more program numbers of each video program currently recorded on DVD according to reproduction orderand writes this in the management information field of DVD. According to a play list reproduction commandthis play list data is read in the management information field of DVDand according to the reproduction order shown in that play list dataeach video program is reproduced one by oneand it goes by the DVD player side.

[0004]Howeverin a DVD playershortly after the attributes of the video program which continues mutually differit cannot shift to reproduction of the following video program. This is for it to take time algorithm setting out to which the decoder provided in the DVD player should carry out decoding corresponding to the attribute of each video program. Thereforein this casean image and a sound will break off in the knot portion of a video programand the problem that it is unsightly can be considered.

[0005]Sowhen newly recording the video program which should be made the object of play list reproduction on DVDthe user investigates beforehand each attribute of the video program of the play list reproduction object already recorded in DVD. And it is possible by inputting each attribute itemfor examplea compression methodvideo resolutionevery one aspect ratioetc. manually to set up a recording mode so that it may become the same as that of this attribute. Since the attribute of all the video programs which are the targets of play list reproduction is unified by thisthe problem that an image way piece arises in the

knot portion of a video program is solved at the time of the reproduction motion.
[0006]Howeversince it exists in the attribute item in which a user has to do manual setting at the time of recording-mode setting out variously besides the **** compression method mentioned abovevideo resolutionand an aspect ratiothe problem that it is troublesome setting every one them up manually is assumed.
[0007]
[Problem(s) to be Solved by the Invention]This invention is made in view of this pointand is a thing.
It is providing the setting method of the information storage device which can set up the recording mode at the time of recording the purpose by easy operationand its recording mode.

[0008]
[Means for Solving the Problem]An information storage device by this invention is provided with the following.
An attribution information reproduction means which is an information storage device which carries out postscript record of the video program new to a recording medium with which attribution information which shows the attribute of said video program with a video program of at least 1 is recordedreproduces said attribution information from said recording mediumand acquires reproduction attribute information.
An encoder which performs code translation processing according to said reproduction attribute information to a video signal and an audio signal which bear said new video program.
A recording device which records a signal acquired by carrying out code translation processing by said encoder on said recording medium.

[0009]This invention is characterized by a setting method of a recording mode in an information storage device comprising the following.
Distance which is a setting method of a recording mode in an information storage

device which carries out postscript record of the video program new to a recording medium with which attribution information which shows the attribute of said video program with a video program of at least 1 is recordedreproduces said attribution information from said recording mediumand acquires reproduction attribute information.
Distance which performs recording-mode setting out which should perform code translation processing according to said reproduction attribute information to an encoder which performs code translation processing to a video signal and an audio signal which bear said new video program.

[0010]
[Embodiment of the Invention]The example of this invention is described to it in detailreferring to drawings to below. Drawing 1 is a figure showing the composition of the information storage device by this invention. In drawing 1it succeeds in setting out of a recording mode according to image attribute setting signal ZE_V to which the video encoder 11 was first supplied from the system control circuit 30. Under the present circumstancesalthough image attribute setting signal ZE_V is shown in drawing 2it shows **** image compression modeTV systeman aspect ratiovideo resolutionthe image average bit rateand the contents set up with the numbers of sub picture streams in each. although the video encoder 11 is shown in drawing 2 in an inputted video signal here -- a **** TV systeman aspect ratiovideo resolutionthe image average bit rateand a sub picture stream -- a number -- code translation is carried out to the gestalt shown with each attributeand a conversion video signal is obtained. And to this conversion video signalalthough shown in drawing 2the compressed image signal acquired by performing the compression code conversion process shown in **** image compression mode is supplied to the multiplexer 12.
Therebyalthough the above-mentioned conversion video signal is shown in drawing 2compression code conversion of it is carried out with the compression method of either one of ****MPEG1 or MPEG 2.

[0011]According to sound attribute setpoint signal ZE_A to which the audio encoder 13 was first supplied from the system control circuit 30it succeeds in setting out of a recording mode. Under the present circumstancesalthough sound attribute setpoint signal ZE_A is shown in drawing 2it shows ****voice coding modethe number of audio streamsthe number of voice channelsand the contents set up by the voice bit rates in each. Herealthough the audio encoder 13 is shown in drawing 2it carries out code translation of the input voice signal to the number of **** audio streamsthe number of voice channelsthe voice bit rateand the gestalt shown with each becoming attributeand it acquires a conversion audio signal. And although shown in drawing 2 to this conversion audio signalthe compressed image signal acquired by performing the compression code conversion process shown in **** voice coding mode is supplied to the multiplexer 12. Therebyalthough the above-mentioned conversion audio signal is shown in drawing 2it succeeds in code translation in the compression code conversion process of ****Dolbey AC-3linear PCMMPEG1or the MPEG 2.

[0012]The multiplexer 12 carries out Time Division Multiplexing of the above-mentioned compressed image signal and compression audio signal which were supplied from above-mentioned video encoder 11 and audio encoder 13 eachand supplies voice image multiplexed signal D_{AV} obtained at this time to the 1st input edge of the selector 14. Management information signal D_C supplied from the system control circuit 30 is supplied to the 2nd input edge of the selector 14. The selector 14 chooses alternatively from among the above-mentioned voice image multiplexed signal D_{AV} and the above-mentioned management information signal D_C the direction which embraced the record signal selection signal S supplied from the system control circuit 30and supplies this to the recording modulation circuit 15. The recording modulation circuit 15 performs the predetermined modulation process for record to the above-mentioned voice image multiplexed signal D_{AV} supplied from this selector 14or the above-mentioned management information signal $D_C$and supplies the abnormal-conditions record signal acquired at this time to the record reproduction head 16.

The record reproduction head 16 irradiates with the recording beam light according to the above-mentioned abnormal-conditions record signal on the recording surface of the recording disk 18 you are made to rotate with the spindle motor 17when a record command signal is supplied from the system control circuit 30. The recorded information corresponding to the above-mentioned abnormal-conditions record signal is recorded on the above-mentioned recording disk 18 by the exposure of this recording beam lightand it goes. On the other handwhen a reproduction command signal is supplied from the system control circuit 30the record reproduction head 16 irradiates the recording surface of this recording disk 18 with reading beam lightand reads the above-mentioned recorded information by receiving the catoptric light. Under the present circumstancesthe record reproduction head 16 supplies the read signal which obtained it by carrying out photoelectric conversion of the catoptric light which received light like **** to the information demodulator circuit 20. Only the part according to the various servo control signals supplied from the above-mentioned system control circuit 30 generates the driver voltage which should drive the above-mentioned slider mechanism 19 and spindle motor 17 above-mentioned eachand the servo circuit 21 supplies it to both. The slider mechanism 19 makes the record reproduction head 16 move to the disk radial of the recording disk 18 according to this driver voltage. After the information demodulator circuit 20 binary-izes the read signal supplied from the above-mentioned record reproduction head 16by performing predetermined recovery processingit acquires an information signal and supplies it to each of the system control circuit 30 and the demultiplexer 22 by setting this to reproduced information signal RI. The demultiplexer 22 carries out the separated extract of each of the above-mentioned compressed image signal and a compression audio signal from this reproduced information signal RI by performing Time-Division-Multiplexing separation to this reproduced information signal RI. The audio decoder 23 performs decoding processing to the above-mentioned compression audio signal with the algorithm according to sound attribute setpoint signal ZC_A supplied from

the system control circuit 30and outputs the audio signal acquired at this time as a reproduced sound signal. The video decoder 24 performs decoding processing to the above-mentioned compressed image signal with the algorithm according to image attribute setting signal ZC_V supplied from the system control circuit 30and outputs the video signal obtained at this time as a reproduced video signal.

[0013]The display 32 which displays various kinds of information at the time of the manual operating device 31 which receives the various command operation by a user and recordor reproduction motion on the system control circuit 30 is connected. RAM(Random Access Memory) 33 and ROM(ReadOnly Memory) 34 in which the software which manages the motion control of this information storage device is stored beforehand are connected to the system control circuit 30. The system control circuit 30 performs various kinds of record and reproduction controland control at the time of recording-mode setting out explained below according to this software.

[0014]Belowwhen recording a desired video program on the recording disk 18recording-mode setting out carried out beforehand is explained. If a user issues a menu screen display command by operating the manual operating device 31although the system control circuit 30 is shown in drawing 3 (A)it will supply the menu screen video signal to which a **** menu indication should be made to perform to the display 32. Herea user chooses "recording-mode setting out" from these menu indications by operating the manual operating device 31. According to selection of this "recording-mode setting out"although the system control circuit 30 is shown in drawing 4it shifts from it to execution of a **** recording-mode setting-out subroutine.

[0015]In drawing 4the video signal which manages the attribute setting method selection display which asks a user any it shall perform between ****" attribute manual setting" and an "attribute copy" although the system control circuit 30 is shown in drawing 3 (B) is first supplied to the display 32 (Step S1). Under the present circumstancesa user performs selection of either above-mentioned "attribute manual setting" or an "attribute copy" by operating the manual

operating device 31. Herethe system control circuit 30 judges whether the user succeeded in selection of the "attribute copy" (Step S2). When judged with not succeeding in selection of an "attribute copy" in this step S2 nextthe system control circuit 30 judges whether the user succeeded in selection of "attribute manual setting" (Step S3). In this step S3when judged with not succeeding in selection of "attribute manual setting"the system control circuit 30 carries out repeat execution of the **** determining operation mentioned above until it returns to execution of the above-mentioned step S2 and either is chosen. In this step S3when judged with having succeeded in selection of "attribute manual setting"the system control circuit 30 supplies the video signal on which the setting-out item for **** each attribute of every should be displayed to the display 32although shown in drawing 3 (C) (step S4). Under the present circumstancesby operating the manual operating device 31a user chooses the setting-out item for every above-mentioned attribute one by oneand inputs the attribution information which shows the contents of that attribute. The manual operating device 31 supplies the attribution information for every attribute of this to the system control circuit 30 one by one. The system control circuit 30 memorizes this to the built-in register R (not shown) one by onewhenever this attribution information is suppliedand it goes (Step S5). Nextit is judged whether all supplies of the above-mentioned attribution information from the manual operating device 31 ended the system control circuit 30 (Step S6). In this step S6when judged with all supplies of attribution information not being completedthe system control circuit 30 returns to execution of the above-mentioned step S5and carries out repeat execution of the **** operation mentioned above. When judged with all supplies of attribution information having been completed in this step S6on the other handthe system control circuit 30Sound attribute setpoint signal ZE_A and image attribute setting signal ZE_V which should be set as each attribute shown by the attribution information memorized to the above-mentioned built-in register R and an identical attribute are generated (Step S7). By execution of this step S7each of the video encoder 11 and the audio encoder 13 is set as the

recording mode according to these sound attribute setpoint signal ZE_A and image attribute setting signal ZE_V. That iseach of the video encoder 11 and the audio encoder 13 is switched to the algorithm for performing the compression code conversion process according to sound attribute setpoint signal ZE_A and image attribute setting signal ZE_V. Nextinto disk management datathe system control circuit 30 generates the management information signal Dc in which the attribution information memorized to the above-mentioned built-in register R was includedand supplies this at the selector 14 (Step S8). Nextvarious kinds of control is performed that the system control circuit 30 should record this management information signal Dc on the management information field of the recording disk 18 (step S9). That isthe system control circuit 30 first supplies the slider servo control signal which should make the record reproduction head 16 transport to the management information field of the recording disk 18 to the servo circuit 21. Hereif the record reproduction head 16 is transported to the above-mentioned management information fieldthe system control circuit 30 will supply the record signal selection signal S as which the above-mentioned management information signal Dc should be made to choose it to the selector 14and also will supply a record command signal to the record reproduction head 16. On the other handin the above-mentioned step S2when judged with having succeeded in selection of the "attribute copy"the system control circuit 30 performs various kinds of control which should reproduce management information from the management information field of the recording disk 18 (Step S10). That isthe system control circuit 30 first supplies the slider servo control signal which should make the record reproduction head 16 transport to the management information field of the recording disk 18 to the servo circuit 21. Hereif the record reproduction head 16 is transported to the above-mentioned management information fieldthe system control circuit 30 will supply a reproduction command signal to the record reproduction head 16. According to thisreproduced information signal RI corresponding to the above-mentioned management information is outputted from the information demodulator circuit 20.

The system control circuit 30 incorporates reproduced information signal RI corresponding to this management informationand memorizes this to the predetermined region of RAM33 (Step S11). Nextthe system control circuit 30 extracts the program information (a program numberthe contents of recorda record dateetc.) corresponding to each video program already recorded in this recording disk 18 out of the management information memorized to the predetermined region of this RAM33respectively. And the video signal on which each program information should be displayed as it is shown in drawing 3 (D) is supplied to the display 32 (Step S12). Herea user chooses the program number of the video program which should be carried out the copy origin of the attribute copy from the program numbers corresponding to each displayed video program with the manual operating device 31. In the meantimethe system control circuit 30 performs the judgment of whether to have succeeded in selection of this program number until it succeeds in the above-mentioned selection (Step S13). If a program number is chosenthe system control circuit 30 will perform the attribute detection subroutine which detects the attribute of the selected video program (a selection program is called hereafter) from the management information memorized to the predetermined region of RAM33 (Step S14).

[0016]Drawing 5 is a figure showing this attribute detection subroutine flow. In drawing 5the system control circuit 30 firstAlthough shown in drawing 6 out of the management information memorized by RAM33PGC common-informations PGC_GI is read from original PGC information ORG_PGCI in video management information RTR_VMG which has a **** file structure (Step S41). Nextthe system control circuit 30 judges whether the number of recorded programs described by this PGC common-informations PGC_GI is 0 (Step S42). In this step S42when judged with the number of recorded programs not being 0the system control circuit 30 memorizes "1" which shows early cell numbers to the built-in register T (not shown) (Step S43). Nextthe system control circuit 30 reads cell information search pointer CI_SRP from original PGC information ORG_PGCI shown in drawing 6The starting position where cell information CI about the cell shown

with the cell numbers memorized by the above-mentioned built-in register T based on the contents is described is read (Step S44). Nextthe system control circuit 30 reads cell information CI described by this starting position out of original PGC information ORG_PGCI shown in drawing 6From cell type information C_TY described in that cell information CIit is judged whether this cell is an animation (Step S45). Drawing 7 is a figure showing a part of information content of this cell information CI. When judged with the cell shown with the cell numbers memorized by the above-mentioned built-in register T in the above-mentioned step S45 being an animation cellthe system control circuit 30Although shown in drawing 7animation VOB search pointer number M_VOBI_SRPN is read out of **** cell information CI (Step S46). Although the system control circuit 30 is shown in drawing 6nextbased on animation AV file information M_AVFI in **** animation AV file information table M_AVFITAnimation VOB stream information number M_VOB_STIN shown by animation VOB search pointer number M_VOBI_SRPN read at the above-mentioned step S46 is read from the inside of this animation AV file information table M_AVFIT (Step S47). Nextthe system control circuit 30 out of each animation VOB stream information M_VOB_STI#1 in above-mentioned animation AV file information table M_AVFIT - #n. What is shown by animation VOB stream information number M_VOB_STIN read at the above-mentioned step S47 is read (Step S48). Drawing 8 is a figure showing information content described by each animation VOB stream information M_VOB_STI. Nextthe system control circuit 30 out of this read animation VOB stream information M_VOB_STI. Sound attribute information A_ATR0 image attribution information V_ATR the image attribute of this cell is described to beand a sound attribute are described to beand A_ATR1 are readrespectivelyand it memorizes to the cell attribute information area of RAM33 by making into cell attribute information attribution information with which both were doubled (Step S49). Under the present circumstancesas it is shown in drawing 2the setting detail of that attribute is described by above-mentioned image attribution information V_ATR and sound attribute information A_ATR for

every attribute item. Nextthe system control circuit 30 judges whether the cell numbers memorized by the above-mentioned built-in register T are the last numbers in this video program (Step S50). When judged with the cell numbers memorized by the built-in register T not being the last numbers in this step S50the system control circuit 30Overwrite memory is carried out at this built-in register T by making into new cell numbers what added "1" to the cell numbers memorized by the above-mentioned built-in register T (Step S51). In the above-mentioned step S45this step S51 is performedalso when judged with the cell shown with the above-mentioned cell numbers not being an animation cell. The system control circuit 30 carries out repeat execution of the **** operation returned and mentioned above in execution of the above-mentioned step S44 after the end of this step S51.

[0017]the attribution information for two or more every cells of each which build a video program with this repetition operation selected in the stage of Steps S12 and S13 shown in drawing 4 is memorized one by oneand goes to the cell attribute information area of RAM33. When judged with the cell numbers memorized by the built-in register T being the last numbers in the above-mentioned step S50on the other handthe system control circuit 30The attribution information for every cell memorized in the cell attribute information area of above-mentioned RAM33 is compared (Step S52)and it is judged whether all are the same (Step S53). In this step S53when judged with all being the samethe system control circuit 30 reads the attribution information of one cell memorized in the cell attribute information area of RAM33 as attribution information of this video program (Step S54). When judged with all not being the same in the above-mentioned step S52on the other handthe system control circuit 30Out of each cell attribute information memorized in the cell attribute information area of RAM33the cell attribute information on the number which serves as an identical attribute mutually which was is chosenand this is read as attribution information of a video program (Step S55).

[0018]After execution of the above-mentioned steps S54 and S55or in the above-

mentioned step S42when judged with the number of recorded programs being 0the system control circuit 30 escapes from this attribute detection subroutineand shifts to execution of Step S15 shown in drawing 4. That isthe system control circuit 30 memorizes the attribution information read in Step S53 in the above-mentioned attribute detection subroutineor S54 to the built-in register R (Step S15).

[0019]The system control circuit 30 carries out sequential execution of the **** step S7 mentioned above - the S9 after execution of this step S15. Therebythe system control circuit 30 performs recording-mode setting out according to the attribution information memorized by the above-mentioned built-in register R to the video encoder 11 and the audio encoder 13. Like the abovethe function (S10-S15S7 - S9) which copies the attribute of the video program already recorded is realized by recording-mode setting out shown in drawing 4 besides the function which carries out manual setting of the attribute (step S4 - S9). That isfirstalthough a user is shown in drawing 3 (B)he specifies the item of an "attribute copy" from the **** attribute setting method selection display screennext although shown in drawing 3 (D)he chooses the video program which consists of a **** program table Shimesu screen the copy origin of the attribute. The attribute of this selected video program is detected based on the management information played from the recording disk according to selection of this video program (Step S14). And according to the detected attributethe recording mode of the video encoder 11 and the audio encoder 13 is set up.

[0020]in Step S7 shown in drawing 4recording-mode setting out of video encoder 11 and audio encoder 13 each is performed so that it may be made to correspond to the same attribute as the attribute of the selected video program. Howeverthe video encoder 11 and the audio encoder 13 may not be provided with the processing algorithm corresponding to the attribute of this selected video program. Under the present circumstancesrecording-mode setting out of both encoders is performed using the attribute nearest to the attribute of a selection video program within limits to which the video encoder 11 and the audio encoder

13 can respond.

[0021]In the above-mentioned exampleit explained taking the case of the case where an information storage device is built by hardware. Howeverthis invention may be the composition that it is not limited to this compositioncomposition of a part of drawing 1 and control of drawing 4 and drawing 5 are realized by a computer programand this is performed by the electronic equipment (for examplepersonal computer etc.) which carries a microprocessor. This realizes a function equivalent to the information storage device of the **** hardware constitutions mentioned above.

[0022]For examplea display device and the personal computer (PC is called hereafter) provided with the DVD-RW drive are prepared. In addition to itthe DVD-ROM disk as a recording medium with which the computer program which succeeds in the control which operates on the operating system of the PCand is shown in the record and reproduction control to the above-mentioned DVD-RW drivedrawing 4and drawing 5 is stored is also prepared. And the computer program stored in that DVD-ROM is installed in PCand it sets up so that execution of the above-mentioned computer program may be attained on this PC. Thena recording medium to add is set to the above-mentioned DVD-RW driveand the same control as the above-mentioned example is made to perform. In this examplealthough the computer program was installed in PC via DVD-ROMthis computer program is installable in PC by other methods. for examplenetworks (cablessuch as a telephone wire and LAN.)such as the Internet Or radio is also included and also PC is connectedand from other information machines and equipment (for examplecomputer server)the **** computer program mentioned above via this network is transmitted (download)and it sets up in the above-mentioned PC.

[0023]Thusit becomes possible to attain the same function as the **** example mentioned above by recording the computer program which manages operation of this invention on recording mediasuch as DVD-ROMand performing this.

[0024]

[Effect of the Invention]As explained in full detail abovein this inventionit succeeds in setting out of the recording mode according to the attribute of the video program according to selection of the arbitrary video programs from each video program recorded on the recording disk. For examplewhen adding to a recording disk the video program which should be made a play list reproduction objectthe recording mode corresponding to each attribute of the selected video program is automatically set up only by choosing one from the video programs of the play list reproduction object already recorded.

[0025]Thereforeaccording to this inventionin adding to a recording disk the program which should be made a play list reproduction objectthe user can set up a recording mode by easy operation.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a figure showing the composition of the information storage device by this invention.

[Drawing 2]It is a figure showing the attribute at the time of an image and sound signal recording.

[Drawing 3]It is a figure showing an example of the screen displayed with the display 32.

[Drawing 4]It is a figure showing a recording-mode setting-out subroutine flow.

[Drawing 5]It is a figure showing an attribute detection subroutine flow.

[Drawing 6]It is a figure showing the file structure of video management information.

[Drawing 7]It is a figure showing a part of information content described by cell information CI.

[Drawing 8]It is a figure showing a part of information content described by M_VOB_STI.

[Description of Notations]

11 Video encoder

13 Audio encoder

18 Recording disk

30 System control circuit